

### **DETAILED ACTION**

1. Claims 1,3,4,6,7,9,10,12,14,15,18-21 were examined and approved.
2. Claims 2,5,8,11,13,16, and 17 were cancelled.

### ***Reasons for Allowance***

3. The following is an examiner's statement of reasons for allowance are considered allowable since when reading the claims in light of the specification, as per MPEP § 2111.01, In re Sneed, 710 F.2d 1544, 1548, 218 USPQ 385 (Fed. Cir. 1983). While the prior art discloses most of the invention it fails to disclose a second module composed of a feedback system for adjusting ( paragraph 0059) a parameter to vary a relation value of the first module (pg. 5, paragraph 0015) relating to the synchronization (pg. 5, paragraph 0012) with the controlled object based on a difference between the relation value and a target relation value (pg. 5, paragraph 0011), wherein the controlled object is controlled by convergence of the relation value relating to the synchronization (pg. 5, paragraph 0012) of the first module (pg. 5, paragraph 0015) to the target relation value (pg. 5, paragraph 0011), and the first module (pg. 5, paragraph 0015) vibrates at different natural frequencies (pg. 5, paragraph 0014) from the controlled object, and the nonlinear interaction has an entrainment effect (pg. 5, paragraph 0013) [claim 1]; a second module composed of a feedback system (FBS) for adjusting ( paragraph 0059) a parameter of the first module (pg. 5, paragraph 0015) to vary a relation value relating to a synchronization (pg. 5,

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paragraph 0012) with the controlled object directly using the difference between the relation value and a target relation value (pg. 5, paragraph 0011) in the nonlinear interaction in which dynamic behavior of a controller and a controlled object cannot be clearly separated, wherein the nonlinear interaction has an entrainment effect (pg. 5, paragraph 0013), and the controlled object is controlled by convergence of the relation value relating to the synchronization (pg. 5, paragraph 0012) of the first module (pg. 5, paragraph 0015) to the target relation value (pg. 5, paragraph 0011) [claim 15]; for achieving a synchronous state with the controlled object through a nonlinear interaction with the controlled object and a second module composed of a feedback system (FBS) (figure 5 and paragraph 0030) for adjusting ( paragraph 0059) a parameter of the first module (pg. 5, paragraph 0015) to vary a relation value relating to the synchronization (pg. 5, paragraph 0012) with the controlled object based on the difference between the relation value and a target relation value (pg. 5, paragraph 0011), comprising: achieving a first synchronous state through a nonlinear interaction, the nonlinear interaction being between the first module (pg. 5, paragraph 0015) and the controlled object and having an entrainment effect (pg. 5, paragraph 0013), wherein said achieving of a first synchronous state is done in the first module; adjusting ( paragraph 0059) a parameter of the first module (pg. 5, paragraph 0015) for varying a relation value relating to the synchronization (pg. 5, paragraph 0012) between the first module (pg. 5, paragraph 0015) and the controlled object directly using the difference between the relation value relating to the

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synchronization (pg. 5, paragraph 0012) and a target relation value (pg. 5, paragraph 0011) through the nonlinear interaction in which dynamic behavior of a controller and a controlled object cannot be clearly separated, wherein the adjusting ( paragraph 0059) is done in the second module [claim 20]; achieve a first synchronous state through a nonlinear interaction, the nonlinear interaction being between the first module (pg. 5, paragraph 0015) and the controlled object and having an entrainment effect (pg. 5, paragraph 0013), wherein said achieving of a first synchronous state is done in the first module; adjust a parameter of the first module (pg. 5, paragraph 0015) for varying a relation value relating to the synchronization (pg. 5, paragraph 0012) between the first module (pg. 5, paragraph 0015) and the controlled object directly using the difference between the relation value relating to the synchronization (pg. 5, paragraph 0012) and a target relation value (pg. 5, paragraph 0011) through the nonlinear interaction in which dynamic behavior of a controller and a controlled object cannot be clearly separated, wherein the adjusting ( paragraph 0059) is done in the second module; and achieve a second synchronous state with the controlled object using the adjusted parameter and converging the relation value relating to the synchronization (pg. 5, paragraph 0012) to the target relation value (pg. 5, paragraph 0011) through co-operation of the first module (pg. 5, paragraph 0015) and the second module [claim 21]. Furthermore, none of the references of record alone or in combination disclose or suggest the combination of limitations specified in the independent claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mr. Tom Stevens whose telephone number is 571-272-3715.

If attempts to reach the examiner by telephone are unsuccessful, please contact examiner's supervisor Mr. Albert Decady (571-272-3819). The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Answers to questions regarding access to the Private PAIR system, contact the Electronic Business Center (EBC) (toll-free (866-217-9197)).

/Thomas H. Stevens/

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/Albert DeCady/

Supervisory Patent Examiner, Art Unit 2121